TCT-143

Abstract Withdrawn

TCT-144

Impact of chronic kidney disease on platelet reactivity and clinical outcomes of patients undergoing percutaneous coronary intervention

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Background: Platelet reactivity is a well-established determinant of clinical outcomes after percutaneous coronary intervention (PCI). Conflicting data have been reported concerning the impact of chronic kidney disease (CKD) on residual platelet reactivity (PR) on clopidogrel in patients with coronary artery disease (CAD) undergoing PCI. Aim of the present study was to compare PR and its association with clinical outcomes after PCI in CAD patients with and without CKD.
Methods: In 800 patients treated with clopidogrel we measured PR with the VerifyNow P2Y12 Assay immediately before PCI (results given as P2Y12 reaction units [PRU]). According to previous studies, we defined HPR as a PRU value ≥240 and LPR and a PRU value ≤178. CKD was defined as a glomerular filtration rate <60 ml/min/1.73 m^2. Clinical follow-up at 30 days was obtained in all patients. Net adverse clinical events (NACE) were considered as ischemic (death, myocardial infarction and target vessel revascularization) and bleeding events (according to TIMI criteria).
Results: Patients with (n=173, 21.6%) and without CKD showed similar PRU values (208±67 vs. 207±75; p=0.819). The incidence of 30-day ischemic (12.1% vs. 7.2%; p=0.036) and bleeding events (8.7% vs. 2.1%; p<0.001) was higher in the CKD group. The presence of HPR was associated with higher rates of ischemic events in both patients with (21.1% vs. 7.6%; p=0.012) and without CKD (12.6% vs. 4.7%; p<0.001). Likewise, LPR was associated with higher rates of bleeding in both patients with (19.3% vs. 3.4%; p<0.001) and without CKD (5.1% vs. 0.5%; p<0.001). NACE were significantly higher in CKD patients with HPR or LPR (25.4%) and lowest in those without CKD, HPR or LPR (6.6%; p for trend <0.001). At multivariate analysis, the combination of CKD with LPR or HPR was the strongest predictor of NACE (odds ratio 3.4, 95% confidence interval 2.0-5.6; p<0.001).
Conclusions: We did not find an association between CKD and higher levels of residual PR on clopidogrel. However, the combination of CKD with either high or low platelet reactivity is a strong determinant of adverse events after PCI.

TCT-145

The significance of VARC-defined acute kidney injury after transcatheter aortic valve implantation using the balloon-expandable Edwards bioprosthesis

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Background: Acute kidney injury (AKI) is a potentially serious complication of transcatheter aortic valve implantation (TAVI) that has recently been re-defined by the Valve Academic Research Consortium (VARC). The aim of this study was to identify the incidence and risk factors for AKI after TAVI.
Methods: We performed a retrospective analysis of data from 248 consecutive patients undergoing TAVI using the Edwards bioprosthesis at St Thomas' Hospital, London, UK. AKI was defined as a VARC-modified Risk, Injury, Failure, Loss, and End-stage (RiFLE) kidney disease score ≥2.
Results: Of 248 patients who underwent TAVI using the Edwards bioprosthesis 89 (35.9%) of patients suffered an acute kidney injury as defined by the a score of ≥2 on the VARC-modified RiFLE score. The overall mean pre-procedural creatinine was 116.6±69.3 μmol/L with an overall peak creatinine of 148.8±94.4 mmol/L (p<0.001). Patients with AKI had greater mean pre-procedural (134.7±74.5 v. 106.5±64.2 mmol/L (p<0.001), 48h (206.8±89.1 v. 98.0±40.0 mmol/L (p<0.001)) and 72h creatinine concentrations (205.9±88.3 v. 99.3±39.6 mmol/L (p<0.001)). A higher VARC-modified RiFLE score was associated with increased mortality (p<0.001). Kaplan Meier analysis according to incidence of RiFLE score ≥2 (i.e. AKI) demonstrated significantly increased mortality at 30 days (13.5% v. 3.8%), 1 year (31.5% v. 15.0%) and overall (40.4% v. 19.5%; logrank p<0.001) at a median follow up of 379 days (interquartile range 113-729 days). Multivariate logistic regression analysis revealed that the variable with the strongest independent association with risk of AKI was DM (OR 3.17, 95%CI 1.67-6.05, p<0.001), followed by peripheral vascular disease (OR 2.54, 95%CI 1.34-6.44, p=0.007) and the pre-procedural stage of chronic kidney disease (OR 1.57, 95%CI 1.11-2.21, p=0.010).
Conclusions: Greater than 1/3 of patients sustain AKI after TAVI using the Edwards bioprosthesis, as defined by the VARC-modified RiFLE score. AKI was associated with increased mortality at both 30-days and at 1-year. A history of diabetes mellitus, peripheral vascular disease and higher chronic kidney disease stage had the strongest independent associations with post-TAVI AKI.

TCT-146

The Effect of Drug-Eluting Stents on Clinical and Angiographic Outcomes in Renal Failure Patients with Dialysis: Multicenter Registry in Asia

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Background: Patients treated with renal failure have been reported having high incidence of mortality and other complications rate after PCI. Optimal treatment of PCI for renal failure patients with dialysis is still unknown. Aim: The aim of this study is to compare the safety and efficacy of Sirolimus (SES), Paclitaxel (PES), EPC capture (ECS), Zotarolimus (ZES-R/ Endeavor Resolute), BiolimusA9 (BES) and Everolimus-eluting stent (EES) on the outcome of percutaneous coronary intervention in renal failure patients with dialysis (CRF-HD).
Methods: A prospective analysis of 1013 patients with CRF-HD (258 SES, 244 PES, 77 ECS, 118 ZES-R, 128 BES, 188 EES) in six high volume Asian centers after successful stenting was performed. The study endpoints were 30 days major adverse cardiac events (MACE) and 12, 24 and 36 months target lesion revascularization (TLR) and MACE.
Results: The baseline clinical characteristics between 5 groups were similar. See table for clinical results.
Conclusions: The use of drug-eluting stents in patient with CRF-HD was safe with low acute complication. Patients treated with PES and EES showed lesser incidence of restenosis rate and TLR compared with other drug-eluting stents.

		SES	PES	ECS	ZES-R	BES	EES
Number of patients		258	244	77	118	128	188
Multivessel disease (%)		89.1	87.7	85.7	83.4	79.6	89.3
MACE at 30 days (%)		0.8	1.2	1.3	0.8	0.8	0.5
Reference diameter (mean: mm)		2.80	2.79	2.88	2.85	2.86	2.91
Lesion type: % of B_2, C (%)		64.0	67.7	56.6	63.7	67.1	61.9
Stent length (mean: mm)		28.9	29.5	26.2	26.9	29.9	27.8
MLD at baseline (mean: mm)		2.65	2.63	2.68	2.59	2.60	2.66
12 months	TLR (%)	15.1	9.8*	20.8	16.9	18.8	9.5*
	MACE (%)	19.4	12.7*	23.4	19.5	20.3	12.2*
24 months	TLR (%)	17.8	11.9*	23.4	19.5	20.3	13.8*
	MACE (%)	22.4	14.8*	26.0	22.9	22.6	17.0*
36 months	TLR (%)	19.4	12.7*	26.0	21.2	21.9	17.0*
	MACE (%)	25.2	16.8*	29.9	25.4	25.0	20.2*

*p<0.05 vs. SES, ECS, ZES-R and BES.

TCT-147

High dose Atorvastatin Pretreatment for Preventing Contrast-Induced Nephropathy in Patients Receiving Primary Percutaneous Coronary Intervention: Prespecified Substudy of a Prospective Randomized Clinical trial

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Background: Controversies persist whether statin pre-treatment can prevent contrast-induced nephropathy(CIN). We evaluate the efficacy of high dose atorvastatin on CIN occurrence.
Methods: We studied whether atorvastatin 80mg loading and subsequent use for 5days (high dose group[HD]) could prevent CIN as compared to those received atorvastatin 10mg (routine dose group[RD]) with same schedule in patients with ST-elevation myocardial infarction undergoing primary angioplasty. Primary endpoint was incidence of CIN, defined as a ≥ 25% or ≥ 0.5 mg/dL increase in baseline serum creatinine within 5 days after contrast administration. Secondary endpoint was 1- and 6-month renal function change and composite of all cause mortality, renal failure, heart failure and target vessel revascularization.
Results: One hundred and ten patients were allocated to HD and 108 to RD from August 2007 to February 2009. CIN incidence was 5.5% (6/110) in HD and 10.2% (11/108) in RD, a nonsignificant difference (p=0.193). CIN occurred significantly less in HD than RD, 0% vs. 16.7% (p=0.024) in subgroups of renal insufficiency (creatinine clearance [CrCl]≤60mL/min) and 4% (1/25) and 23.1% (6/26) respectively, (p=0.048) in old patients≥70. Composite of clinical outcomes at 6-month was comparable in HD and RD (7.9% and 13.1%, p=0.26). CrCl rat 1-month tended to be higher, in HD than in RD, 81

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